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AGRICULTURAL MEMORANDUM NO 522

L. P. SMITH.

Forecasting barley acreages 8 months ahead using DWR data

Following the lines of Ag Mem 521 attempts were made to forecast barley acreages in the same manner.

The formula emerged as

$$3545 - 100d + 345n$$

where d is the Sept 30 deficit (inches)
and n is number of years after 1961 with a maximum of 5.

	Barley acreages (1000 acres)			
Results	Estimated	Actual	Error	Mean Sept 30 deficits
1960	3045	3020	+25	5.0
1961	3325	3346	-21	2.3
1962	3480	3465	+40	4.1
1963	3975	4066	-91	2.6
1964	4270	4285	-15	3.1
1965	4475	4535	-60	4.5
1966	5200	5155	+45	0.7
1967	5020	5094	-74	2.5
1968	4960	4958	+2	3.1
1969	5260	4995	+265	0.1
		Mean error	64	

This suggests that the increase of the cereal acreage 1961-66 was largely due to increase in barley sowings. The wheat acreage is strongly controlled by autumn weather. Barley is mainly spring sown and is therefore inversely related to wheat (negative regression coefficient).

The large error in 1969 shows that these estimates cannot be relied on in an exceptional year.

The large error in the 1969 estimates is further explained by the fact that there was 394,000 acres of fallow that year (the highest total in the decade).

Taking the acreage of barley plus fallow and recalculating:-

Barley plus fallow acres = 3805 - 110d + 337n.

Results	Estimates	Actual	Error
1960	3255	3200	+55
1961	3552	3631	+79
1962	3691	3600	+91
1963	4193	4271	-78
1964	4475	4466	+9
1965	4658	4684	-26
1966	5413	5396	+17
1967	5215	5304	-39
1968	5149	5139	+10
1969	5479	5389	+90
		Mean Error	54

Considering the large increase in barley acreage and the very approximate assumption of a linear relationship 1961-66, the results are very satisfactory.

Any comments or suggestions on this paper should be referred to the author.

Meteorological Office
London Road
Bracknell

January 1973